

### 7.2.6. Summary

This case study has demonstrated a couple of important points. First, the simple techniques described in the previous sections are useful for real world application and are adequate for a wide range of quick measurements. What some of the tests lack in precision and documentation, they make up in accessibility and ease of implementation. Adding more instrumentation and complexity to the test changes the basic technique very little and merely enhances the data collection process with automatic and sometimes more precise data. Second, the case study demonstrated the criticality of fully understanding the workings of the system under test. Without a thorough knowledge of the theoretical resolution limits of the radar under test, it may have been necessary to test the resolution out to the display limits of the radar, wasting flight time and thus money.

During the development of the techniques presented here, frequent license was permitted in the selection of test ranges, speeds, altitudes, etc. It cannot be overemphasized that the details of the test must be specific to the needs of the system and platform under test. It is intended that the numbers presented will give the reader a flavor for the requirements of the fictitious sample systems and platforms, enabling him or her to then choose test points and conditions for other systems. One final point must be stressed. Every detail of each individual test, as well as the order and precedence, must be thought through and planned before the flight and then the plan must be flown, if usable data is to be consistently obtained.

## 8.0. CONCLUSIONS AND RECOMMENDATIONS

These test techniques should be used as a generalized baseline for the development of specialized tests for new systems. A basic knowledge of system theory and the characteristics of the test article are assumed. All the techniques presented are as simple as possible and require a minimum of outside assets. Better and more exact methods exist; however, most merely involve scaling up the techniques presented here, usually in the form of more sophisticated and precise truth data (time/space positioning data, telemetry, onboard instrumentation, etc.). Using the methods presented here, the test pilot should be able, in just a few flights, to make a good qualitative assessment of the system under test and have adequate numerical data to support his or her assessment. Although not suitable in some test programs, this level of data accuracy is often sufficient. More important than the exact test procedure presented, is the methodical, common sense thought process required for test planning. Understanding the development of the simple tests presented here for the sample systems will enable the evaluator to develop his or her own procedures for systems and functions not covered by this document.